BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Redevelopment of Spectrum to	)	ET Docket No. 92-9
Encourage Innovation in the Use	)	
of New Telecommunications	)	RM-7981
Technologies	)	RM-8004

To: The Commission

COMMENTS
OF THE
AMERICAN PETROLEUM INSTITUTE

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SUMMARY

American Petroleum Institute (API) members operating microwave systems in the 2 GHz range will be significantly affected by the Commission's decision to reallocate this spectrum for co-primary use by emerging new technologies. API strongly urges the Commission to adopt a transition plan that will ensure that incumbent users forced to relocate from current frequency assignments can do so without disruption to vital communication systems. For this reason, API supports a five year voluntary period during which new technology service providers and incumbent licensees can freely negotiate the migration to new facilities. The Commission should encourage market-based mechanisms in which parties can negotiate the best resolution of these issues. This will minimize the need for regulatory oversight and generally smooth the transition process.

Furthermore, the systems which API members operate are technologically complex in that they tie together many inter-related company functions on a national and worldwide basis. The process of replacing discrete links within these systems will be time consuming and a five year transition to new facilities is a minimum amount of time in which this migration can be accomplished.

API agrees that new technology service providers must be required to provide comparable alternate facilities when seeking to displace 2 GHz microwave users. Comparability will be different for different users, but in most case will encompass comparable bandwidth, availability, reliability and performance. An incumbent licensee must never be forced to compromise its current level of reliability merely because the new technology service provider disagrees on whether or not the incumbent licensee needs that level of reliability. Incumbents must be allowed to choose a spectrum-based alternative and not be required to use common carrier facilities. Nor should incumbent microwave licensees displaced involuntary be forced to relocate until comparable facilities are available and sufficient time allowed to make technical adjustments necessary to ensure a seamless hand-off. While API favors encouraging voluntary negotiations, once the involuntary relocation period begins, displaced licensees must have reasonable assurance that they will not be forced to leave current spectrum assignments until replacement facilities are in operation and tested. The one-year period thereafter to allow licensees to determine whether or not the new facilities are adequate should provide reasonable assurance that any subsequent problems can be redressed.

API is vitally concerned that incumbent licensees have control over the replacement process. The Commission should not dictate that new technology service providers actually perform the activities required to install replacement facilities. Allowing incumbents to control this process will go far to ensure that they are satisfied with the replacement facilities and will help minimize disputes. Should disputes arise, API supports the use of arbitration and/or mediation to resolve these issues. Finally, API supports giving immediate access to government spectrum in the 1710-1850 MHz and 2220-2290 MHz federal government bands since these frequencies will provide the long haul propagation characteristics that will be necessary to accommodate some of the currently used 2 GHz links that cannot be adequately replaced by alternative media or higher range microwave spectrum.

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1. The American Petroleum Institute ("API"), by its attorneys and pursuant to Section 1.415 of the Rules and Regulations of the Federal Communications Commission ("Commission" or "FCC"), hereby submits these Comments in response to the First Report and Order and Third Notice of Proposed Rule Making adopted by the Commission on September 17, 1992 in the above-styled proceeding.1/

I. PRELIMINARY STATEMENT

2. API is a national trade association representing over 200 companies involved in all aspects of the oil and

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1/ First Report and Order and Third Notice of Proposed Rule Making, ("3rd NPRM"), ET Docket No. 92-9, 57 Fed. Reg. 49020 (October 29, 1992).

gas industries, including exploration, production, refining, marketing and transportation of petroleum, petroleum products and natural gas. Among its many activities, API acts on behalf of its members as spokesperson before federal and state regulatory agencies. The API Telecommunications Committee is one of the standing committees of the organization's Information Systems Committee. The Telecommunications Committee evaluates and develops responses to state and federal proposals affecting telecommunications facilities used in the oil and gas industries.

3. API's member companies are authorized by the Commission to operate significant numbers of point-to-point microwave systems in the Private Operational-Fixed Microwave Service (POFS), including many transmitters licensed in the 1850-1890 MHz, 2130-2150 MHz, and 2180-2200 MHz bands ("2 GHz band") that are being reallocated for emerging technologies in this proceeding. These point-to-point systems are used to ensure the safe production, processing and refining of petroleum and natural gas, and to expedite the ultimate delivery of these products to commercial, industrial and residential customers. Accordingly, API is vitally concerned about the reallocation of the 2 GHz band

and any proposals involving the displacement of the incumbent licensees of this spectrum.

II. BACKGROUND

4. API has been an active participant in this proceeding, as well as the related proceeding in Docket No. 90-314 that address reallocating spectrum from the 2 GHz range for new technologies, including personal communication services (PCS). Since the outset of the Commission's proposal to reallocate this spectrum in its 1990 Notice of Inquiry,[2/] API has repeatedly stressed the concern with which the oil and gas industries view the reallocation of this spectrum. API member companies use channel assignments from the 2 GHz frequency band extensively to ensure the safe and efficient production and distribution of the nation's petroleum and natural gas energy sources.

5. API reasserts that the Commission's action to reallocate the frequency bands 1850-1990 MHz, 2130-2150 MHz and 2180-2200 MHz to new technologies, whether on a shared or exclusive basis, holds potentially negative consequences for the public health and safety. Since the Commission

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2/ Notice of Inquiry, Docket No. 90-314, 5 FCC Rcd. 3995 (1990).

intends to implement the contested reallocation in a short time frame, API respectfully urges the agency to proceed in a manner which will insure minimal harmful impact on essential POFS operations now conducted in these bands.

III. COMMENTS

A. The Commission Must Establish an Adequate Transition Period to Accommodate Complex Migration Planning Activities

6. The Commission's decision to permit co-equal sharing of the 2 GHz band with PCS operations holds the potential to create significant harmful interference to existing POFS operations. Accordingly, it is incumbent upon the Commission to take every possible measure to ensure that the transition from POFS to new technology operations in the band occurs with a minimum of harmful impact on incumbent licensees and the public safety. This concern is reflected in the language adopted by the U.S. Senate in an amendment to its appropriation bill for the Federal Communications Commission.[3/] While API applauds the Commission's attempt to establish a transition framework which will ease the burden of migration upon POFS licensees, API respectfully seeks clear assurance that the transition plan will take

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3/ 3rd NPRM at Appendix C.

into account and accommodate the complexities and difficulties of the proposed migration of POFS licensees from their current spectrum assignments.

7. API firmly believes that a minimum five-year period, during which only voluntary negotiations between new technology proponents and incumbent licensees may occur, is necessary to ensure that the long-range planning for migration from present assignments may be performed adequately. The Commission is well aware that many of the presently authorized fixed microwave systems span great geographic distances and are technologically complex. In part, this complexity is due to the fact that many company functions, including SCADA and computer transmissions, are carried over these microwave channels. Hence, any reconfiguration of the microwave networks must be carefully coordinated to ensure there is no service interruption during any change-over. Further, it is likely that the needs of new technology licensees could trigger the loss of "pieces" of numerous large systems since specific "links" in those systems may have to be replaced. Accordingly, it will take considerable time and engineering effort to evaluate the most feasible and effective means to replace critical microwave links within existing systems with alternative spectrum and/or technologies. Establishing even a single

link or rerouting and reconfiguring existing systems has, in the experience of API member companies, required lengthy planning cycles in order to ensure a "seamless handoff" of the critical communications carried over these facilities.

8. In addition, normal problems encountered with system reconfiguration will be considerably heightened, since the availability of adequate long-haul microwave replacement spectrum will be diminished by the 2 GHz reallocation. Accordingly, the Commission must make certain that the proposed transition will provide sufficient time to permit existing POFS licensees to work with new technology proponents to ensure that the transition proceeds without creating potentially hazardous lapses of telecommunications services for incumbent licensees.

9. If no significant problems are encountered, planning, engineering, equipment procurement and licensing for a single microwave hop takes a minimum of one year. This is assuming that the timing of the project falls at the beginning of the company's current year budget cycle. If multiple hops need to be replaced, the time period is easily extended to twenty to thirty-six months. At a minimum, the following activities must be accomplished in the replacement process: negotiation of terms of replacement with new

technology providers, initial planning and engineering, assessment of spectrum availability, initiation of intra-company budget process (usually one year in advance), final engineering, frequency coordination and FCC licensing, vendor selection and equipment acquisition, additional antenna sites acquired (if needed), construction and installation of equipment, system testing and acceptance.

10. Furthermore, if POFS licensees are forced to move to the 6 GHz band, additional tower sites are likely to be required. Tower site acquisition is one of the most time consuming aspects of implementing new microwave paths. Negotiation with land owners are often protracted, zoning approval or authorizations required from local planning boards can result in protracted delays. Environmental studies, if required, will extend the entire process for several years. While these issues do not arise in all situations, in congested urban areas where initial PCS operations are most likely, new tower site acquisitions are likely to be difficult.

11. While some of these activities can be carried out simultaneously, a one-to-three year time frame is an absolute minimum. A five year period for the voluntary process to run is a reasonable amount of time for parties to

accomplish negotiation and replacement of needed 2 GHz microwave paths. The Commission should view this voluntary period as the most advantageous mechanism to accomplish its objectives without the need for extensive regulatory oversight. However, the Commission must allow adequate time for this type of market-based procedure to run its course. API believes that five years is the minimum reasonable time frame for this effort.

12. API further submits that the minimum five-year "purely voluntary" transition period must be applied uniformly. API is concerned with the Commission's belief that, should it adopt a "lengthy transition period" for those "geographic areas where there may be little or no spectrum available", such a process will frustrate the introduction of new services and a shorter transition period of three years should apply.[4/] In those geographic areas where little spectrum is available, it will be even more difficult for incumbent licensees to find adequate replacement facilities since the possibility of securing spectrum assignments in other bands clearly will be diminished. Accordingly, in those areas where spectrum for new technologies may be more difficult to locate, incumbent

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4/ 3rd NPRM at ¶ 28.

licensees will face even greater migration difficulties than in less crowded spectrum areas. Accordingly, incumbent licensees in those locations must be given, at a minimum, a transition period equal to that provided other incumbents.

13. Additionally, API questions why the commencement date of the transition period must begin upon the effective date of the Commission's final decision in the related Further Notice of Proposed Rule Making in this proceeding.[5/] It is unlikely that significant deployment of new technology systems will commence immediately, since it is uncertain precisely when new technologies will be licensed and whether new technology licensees will enjoy sufficient commercial success to make such systems viable in the near term. Accordingly, API believes that the commencement date of the transition period should be deferred until the Commission begins granting authorizations to construct new technology systems. Until such time as at least one new technology proponent demonstrates to the Commission the showing necessary to obtain operational and/or construction authorization, there is no need to begin a transition and relocation process.

5/ 3rd NPRM at ¶ 24.

14. Furthermore, it is highly unlikely that any potential new technology service provider would enter into serious negotiations until it is certain that it will receive a license to operate in a particular geographic area. Beginning any voluntary transition before this point will merely artificially shorten the time when actual market negotiations will take place. The lessons of the Direct Broadcast Satellite transition should steer the Commission away from deadlines which do not reflect market realities. API therefore urges the Commission to begin the transition period with the date on which the first actual full-term new technology authorization in a particular market is granted.

15. Accordingly, API wholeheartedly agrees that no incumbent licensee should be faced with a sudden or unexpected request for involuntary negotiations and supports the concept that there be a minimum time period for voluntary negotiations after the grant of a license for an emerging technology service provider. Since API has already recommended that the Commission not start the clock on the voluntary negotiation period until the grant of a license to an emerging technology service provider, the issue of an unexpectedly short transition period should not arise if the Commission adopts API's recommendation. The Commission appears to be concerned with the fact that it has decided to

start the clock on the voluntary period at the conclusion of the rule making on the re-channelization plan for the bands above 3 GHz. As discussed, this approach has the effect of artificially shortening the amount of time in which voluntary negotiations may occur. Realistically, few prospective new technology service providers are likely to expend resources to relocate incumbent 2 GHz licensees before they know whether or not they will be awarded an operating license in a particular area. Therefore, no real market will develop until there are companies with a significant interest in relocating existing microwave users. Consequently, API submits that the Commission should simply begin the transition period clock when it commences issuing licenses to new technology service providers. This will alleviate the problem of any sudden or unexpected requests for involuntary relocation.

16. In the case of any allocations made for unlicensed services where a market for buyers willing to pay relocation costs will never exist, the Commission must establish a regulatory mechanism that will ensure that existing 2 GHz microwave users forced from this spectrum will be fairly compensated. As API proposed in Comments submitted in Docket No. 90-314 concerning data-PCS operations, the Commission should establish a minimum transition period

during which any licensee operating in the band proposed for unlicensed operations would have an opportunity to relocate to other spectrum. Manufacturers intending to market equipment for use in these bands should contribute to an escrow fund which would be used to reimburse users' relocation costs.6/ During this transition period, the Commission should not authorize any equipment to operate on an unlicensed basis (such as data-PCS in the bands 1910-1930 MHz). This shortened transition period would allow licensees who believe they could be immediately affected by operation of unlicensed devices to vacate the band in an orderly manner. Further, this procedure would enable the Commission to establish a equitable compensation mechanism funded by the manufacturers who wish to market equipment using this spectrum.

17. In the case of data PCS, API has recommended that the Commission establish a baseline figure for average

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6/ In its Reply Comments in Docket No. 90-314, API recommended that licensees in the band 1910-1930 MHz be given eighteen months to notify the Commission that they intended to relocate and to request reimbursement from an escrow fund. Relicensing and construction of new facilities could not be accomplished within the eighteen months in most cases, but this would be the cut-off for requesting reimbursement.

replacement costs (e.g., $100,000 per station).[7] The Commission could then determine the total number of potential stations that would need to be replaced and each manufacturer requesting equipment certification would pay a pro rata share of the total estimated cost of relocating all microwave stations licensed in the reallocated frequency band. The baseline replacement cost figure would not be equated to a maximum amount that a licensee could recover as his replacement costs, rather it would simply be a figure used for purposes of funding the escrow account. Licensees could then submit their actual replacement cost figures and be compensated for these costs from the fund. Should additional funds be required (for example in the case where the average replacement costs exceed $100,000 per station) manufacturers should be obligated to contribute additional funds to meet any shortfall.

7/ Based on Commission records, there appear to be approximately 435 stations licensed in the 1910-1930 MHz band.

B. The Involuntary Relocation Mechanism Must Ensure Incumbent Licensees of Minimal Service Disruptions and Adequate Compensation for Migration Costs

18. API generally agrees with the Commission's plan not to permit new technology proponents that initiate involuntary relocation proceedings to access an existing licensee's spectrum until completion of all activities necessary for implementing the incumbent's replacement facilities. In this regard, API strongly supports the Commission's decision that all existing fixed microwave licensees will retain co-primary status in the 2 GHz band until such time as they are either voluntarily or involuntarily relocated to new frequency bands. As API has documented extensively throughout these proceedings, the microwave facilities now licensed in the 2 GHz band serve critical operational needs. Incumbent users forced to abandon these facilities must be fully compensated, and they must be able to ensure that any replacement facilities meet their needs, and that overall system reliability is not compromised.

19. On the issue of replacement costs, the Commission has asked for clarification on the estimation costs and time involved in any relocation effort.[8/] THe Commission thus

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8/ 3rd NPRM at 13, n. 36.

far has identified that the emerging technology service provider must guarantee the payment of all relocation costs including engineering, equipment, site acquisition and preparation costs, construction and equipment testing, application preparation and FCC filing fees, as well as any additional costs that the relocated microwave licensee may incur as a result of operation in a different fixed microwave band or migration to other telecommunications media. In addition, the emerging technology service provider must ensure that all activities necessary for implementing the new facilities, such as frequency coordination and cost analysis of the complete relocation procedure, are reimbursed. This also includes identifying and obtaining new microwave frequency assignments or other facilities where applicable. The Commission should clarify that equipment costs also include the capital costs of spare parts that an incumbent normally keeps in inventory in connection with operation of its 2 GHz systems. Further, compensated costs must include the expenditure of time by personnel of the displaced licensees who, by necessity, must be involved in the relocation activities. These personnel costs can be accounted for by hourly charges, and should encompass time required to be spent from the date the relocation request is made. Further, incumbents should be able to bill for these costs on a quarterly basis. As an

alternative, the new technology provider should be required to post a performance bond for the costs to be reimbursed.

20. Another aspect of covered replacement costs which should be clarified is any expense incurred by incumbents to provide full interface capability with their remaining telecommunication systems particularly when only a "partial migration" from a single (or small number of) link(s) in a multi-link system is mandated. For example, any costs associated with ensuring that the incumbent licensee's system integrity is maintained must also be the responsibility of the new technology service provider. Because additional costs may be involved in successfully integrating a hybrid system (e.g. adding one new digital path to an existing analog network), these costs must also be the responsibility of the new technology service provider. Moreover, the ultimate choice of whether a new frequency or alternative media technology will be employed to replace the existing link(s) must remain solely in the hands of the displaced incumbent licensee since that licensee is in the best position to fully evaluate its telecommunications needs.

21. On a related point, API agrees with the Commission that the emerging technology service provider must

compensate incumbent licensees for building a new microwave system (or alternative facilities), and testing it for comparability to the existing 2 GHz system. However, the Commission should clarify that this does not mean that the new technology service provider would necessarily be actively involved in the implementation of the replacement facilities. API members must have control over the implementation of the replacement facilities. For example, their own personnel, or contractors selected exclusively by the company, must be used in order to meet internal quality assurance requirements. API member companies have extensive experience in microwave engineering and construction, and have established standards for implementing these systems. Furthermore, their personnel must be able to closely control and supervise anyone who will have access to their facilities for any purpose. Accordingly, incumbents must be able to follow normal company procedures for implementation of any replacement facilities. It would be totally unacceptable for the Commission to mandate that new technology service providers, who have little or no experience with incumbents' microwave system or communication requirements, have any unnecessary involvement in the actual engineering and construction of the replacement facilities. Incumbent licensees should be permitted to follow normal intra-company procedures in

engineering, vendor selection, and implementation. This will considerably streamline the process and will be beneficial both to the emerging technology service provider and the incumbent licensee. Using this procedure should go a long way in ensuring that the replacement facilities will be acceptable to the incumbent licensee when finally installed and activated.9/

C. Comparable Alternate Facilities Must Be Guaranteed to Displaced 2 GHz Licensees

22. API agrees that "comparable alternate facilities" must be provided to displaced 2 GHz microwave users. The Commission should also clarify that incumbents have the option of choosing spectrum-based facilities as a replacement and cannot be forced to choose non-spectrum alternate technology. As discussed above, the incumbent licensee must have the option of deciding on the equipment vendor, and employment of engineering and/or construction services, whether these be provided in-house or under contract. API believes that the Commission may establish some general parameters of comparability. For example, the

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9/ To the extent the Commission needs to clarify the language of Rule Section 94.59(b) to accomplish this, it should take this opportunity to do so. API notes that the Petition for Clarification and/or Reconsideration filed by the Utilities Telecommunications Council makes this same point.

concept of comparability must, at a minimum, include comparable bandwidth, availability, reliability and performance. An incumbent licensee must never be forced to compromise its current level of reliability merely because the new technology service provider disagrees on whether or not the incumbent licensee needs that level of reliability.10/ The incumbent licensee must be able to maintain, at a minimum, the current level of quality and reliability on its communications system, particularly when a new technology service provider may only be purchasing discrete links within highly complicated, technologically sophisticated microwave system such as those operated by API member companies. Furthermore, an incumbent licensee must never be required to use common carrier facilities as replacement facilities for 2 GHz microwave unless that incumbent specifically chooses this alternative. While common carrier facilities may be engineered to similar reliability standards, severe problems can arise in emergency situations because a carrier's plan for restoration of service may not give priority to petroleum and natural gas company customers. In order to control

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10/ Presumably, the new technology service provider would not wish to assume any liability associated with degraded system reliability.

speed of restoration, these companies must operate private facilities for critical circuits.

23. Issues of comparability may be somewhat more complex when a replacement medium other than spectrum is chosen. For example, if fiber optics were to be selected to replace microwave in a particular instance, the cost of maintaining the physical security of the system must be taken into account since fiber is vulnerable to breakage at any point, whereas a microwave network is vulnerable generally only at transmitter locations. API believes that disputes as to comparability can be minimized when the incumbent licensee chooses the alternate facilities and directs the process from initial engineering to final construction and testing.

24. API agrees that incumbent POFS licensees displaced involuntarily should not be forced to relocate until comparable facilities are available and sufficient time allowed to make any technical adjustments necessary to ensure a seamless handoff. Therefore, a new technology provider should be required to file a statement from the displaced licensee with its FCC application confirming that the seamless handoff has taken place and that all reimbursement costs have been paid. The Commission has